

Stone Adzes of the Black Current Region —Polished Stone Adzes of Hachijo Island

Received 27 December 1982

SHIZUO ODA

THE HACHIJO ISLAND SURVEY

HACHIJO ISLAND, separated from the neighboring Miyake Island and Mikura Island by the main flow of the Black Current, lies some 300 km south of Tokyo. The ferry which leaves Takeshiba Wharf in Tokyo at 10:00 P.M. docks at 9:00 A.M. the following day at Hachijo Island (there are two harbors on the island, Yaene and Sokodo, the port of entry being determined by wind direction), so that the voyage is just eleven hours. Air travel has recently come into wide usage, and the island can be reached in about 50 minutes from Tokyo's Haneda Airport. The former image of Hachijo as "the island that even the birds won't fly to" has now completely vanished.

In 1956 and 1957 the Tokyo Metropolitan Board of Education inaugurated an archaeological survey of the Izu Chain as part of the General Survey of Tokyo Municipal Cultural Properties. This survey group consisted of the archaeological research staff of Meiji University, headed by Morikazu Goto, who has since passed away. As a result of work done during that time, the presence of sites covering every period from the Early Jomon through the Yayoi was verified on the islands of Oshima, Toshima, Nii, Miyake, and Mikura, and excavations were carried out at some of these sites. Shogoro Tsuboi reported on these islands in 1901, but the Meiji University survey was the first to conduct an investigation using standard archaeological methodology in the hard-to-reach, volcanic-ash-covered, outlying islands of the Tokyo metropolitan area. Unfortunately, this survey led to the discovery of no archaeological materials on

Hachijo Island, and it was held that there was no evidence of any traces of prehistoric man on the island. The report notes that the local inhabitants had two prehistoric polished stone adzes in their possession, but since their localities of discovery were unknown, they were not accepted as legitimate artifacts. These polished stone adzes, discovered under peculiar circumstances, are discussed in this article.

In 1962, the eastern side of Hachijo Hot Springs Hotel at Yuhama, in Kashidate, was leveled to build a greenhouse for the cultivation of foliage plants. In the course of this work a large polished stone adze was found by a local middle school student, and the Tokyo Cultural Affairs Section was notified of the discovery by the Hachijo Island office of the Tokyo Education Ministry. This verified the existence of Stone Age artifacts on Hachijo Island and prepared the way for the execution of a scientific investigation. Sosuke Sugihara of Meiji University was commissioned by the city of Tokyo and carried out the first excavation survey in March of 1964. Sugihara and Mitsunori Tozawa evaluated the survey results as follows:

A. Judging from the presence of polished stone adzes, obsidian flakes, and stone dishes, there is a strong connection with the Jomon culture of Japan. In addition, Type A pecked stone adzes appeared for a time. These were developed by the inhabitants out of direct necessity, and the distinctive pottery is also characterized as having developed internally as a local island industry.

B. The quite different appearance, in a number of respects, of the Yuhama site artifacts compared to Jomon artifacts might possibly be explained by a later influx from other already settled islands in the Izu Chain, rather than a direct influx from the main Japanese islands.

C. On the other hand, the Stone Age culture of the Yuhama site may not necessarily be related directly to Jomon culture, and there is a strong possibility that the industry arrived from islands further to the south or from areas through which the Black Current flows.

It remains to be determined whether any of the above three inferences are correct.

In 1972 and 1973, the Tokyo Site Distribution Survey Association reverified the existence of Stone Age sites on Hachijo Island, and tabulated and photographed the artifacts. As a result of this survey, the existence of artifacts on the island differing in both type and chronology from those of the Yuhama site became clearly evident. In addition, an analysis of the obsidian flakes collected at the Yuhama site determined them to be from Kozu Island, and they were dated at 5800 B.P. This proved to be not inconsistent with the ^{14}C date of 5840 B.P. \pm 100 (GaK-686) obtained as a result of the Meiji University excavations.

In March 1973, by the publication of the Site Distribution Survey's report, the stage was set for the implementation of a second survey excavation at the Yuhama site. This was part of the emergency excavation survey by the Tokyo Metropolitan Board of Education and was carried out under Koichi Nagamine of Kokugakuin University. This survey placed great emphasis on mapping of the site (Fig. 1) and confirmation of the stratigraphy, and brought the following facts to light:

1. The greater part of the site, including the portion excavated by Meiji University in 1964, had already disappeared due to the expansion of the hotel facilities.

2. In the course of excavation of a section where the stratigraphy remained intact, a house site was discovered in a sunken area.

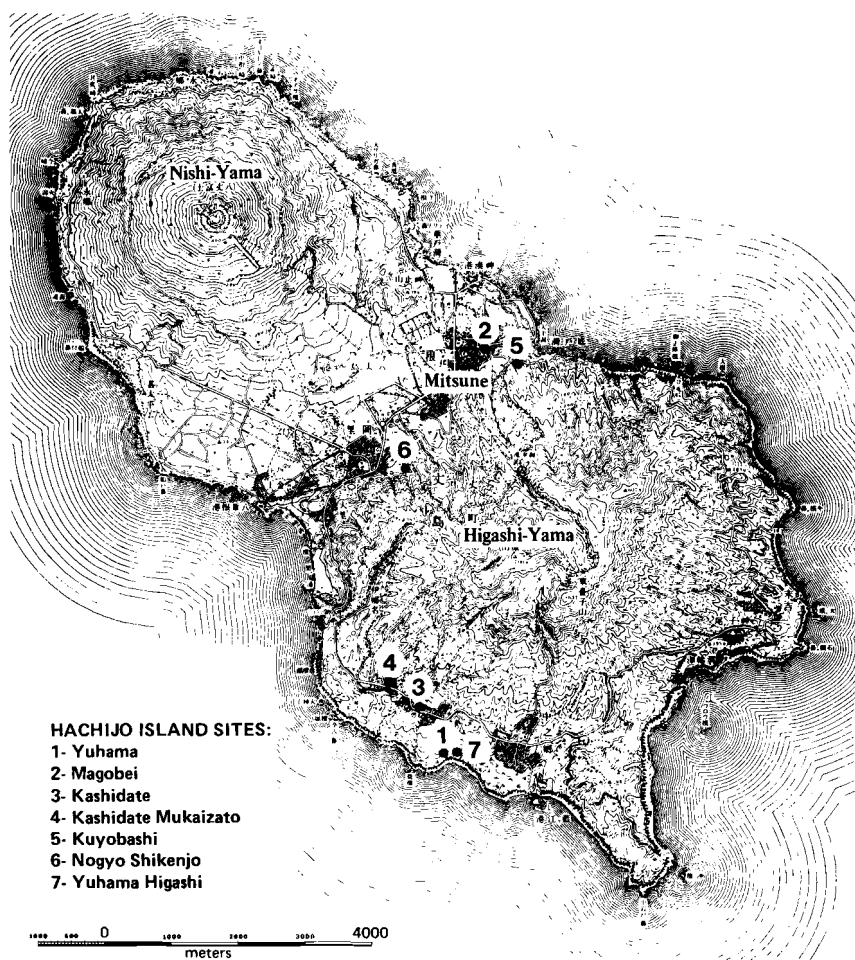


Fig. 1 Map of Hachijo sites.

3. The layers containing artifacts, although comprising but a very small portion of the site area excavated, were preserved in good condition.

Presumably, the site was damaged after the Meiji University excavation in the absence of any protective governmental policy.

In 1974, another group went to Hachijo Island to record data on the stone adzes for the History and Ethnology Museum. At this time, they were able to record new material in the possession of the Hachijo Onsen Hotel.

There have been no subsequent archaeological investigations carried out on Hachijo Island. As can be seen from the history of research so far, the Yuhama site is usually taken as the one and only site on Hachijo Island. However, it must not be overlooked that the island has yielded large, polished stone adzes, generally discovered in areas where the stratigraphy cannot be determined.

The polished stone adzes of Hachijo Island are considered so unique by scholars

researching Japanese Stone Age culture that they would immediately specify these adzes as the most distinctive stone artifacts excavated on the island. Having recently completed measurements of all the material so far excavated, I would like to present this data here, as well as touch on a number of matters these new facts bring to mind.

THE STONE ADZES OF THE KUYOBASHI SITE (Figs. 2-5)

Three locations on Hachijo Island bear the name Kuyobashi. The word *kuyo* in Japanese means 'memorial service,' and the sites are used for funerary rites conducted on the island. For 49 days after a person's death, family members visit the grave daily, and when the period of mourning is over, they go to one of the Kuyobashi sites on the village out-

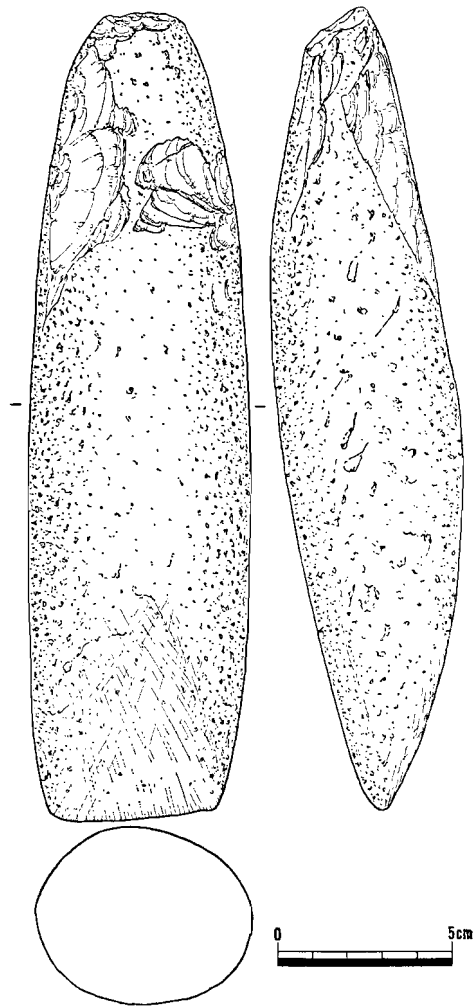


Fig. 2 Convex-curved, polished stone adze from the Kuyobashi site.

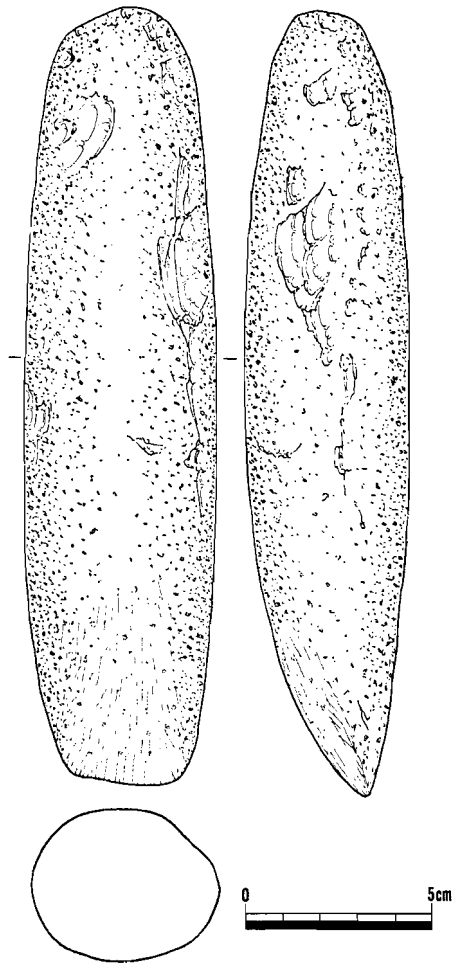


Fig. 3 Polished adze from the Kuyobashi site.

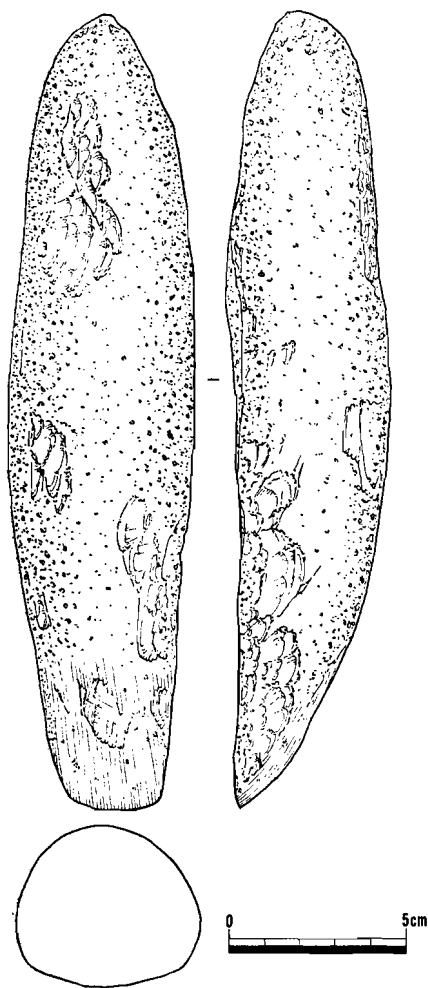


Fig. 4 Polished adze from the Kuyobashi site.

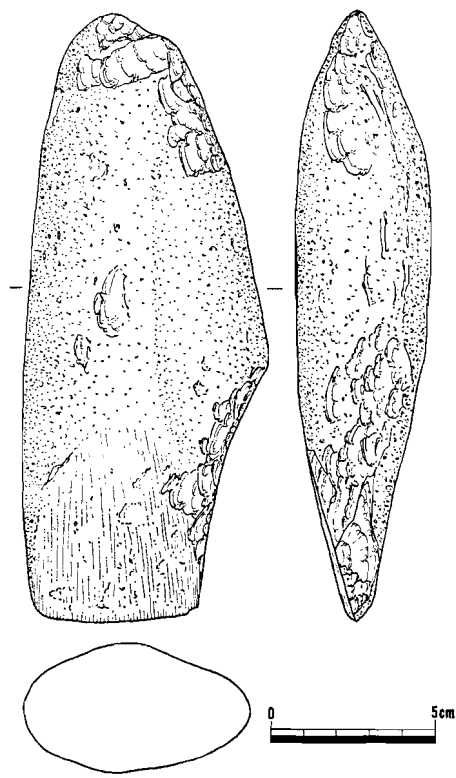


Fig. 5 Polished adze from the Kuyobashi site.

skirts and pray for the spirit of the departed. There are also souls who have no benefactors to mourn them (people who have died leaving no relatives) and on the sixteenth day of January and on the day of the Bon Festival, these spots were crowded with villagers offering prayers for the spirits of the departed. The Kuyobashi site where stone adzes were discovered is the spur on the south side of the bridge crossing the Okawa River where the road bends from Mitsune toward Toryu Pass. Hachijo Island is shaped like a vertically-split gourd, with Nishiyama (Hachijo Fuji, as it is also called) at the northwest section. Hagashiyama, also called Miharayama, lies in the southeast section. Nishiyama was created by recent volcanic eruptions and lava lies exposed over its entire surface. Higashiyama is an old volcano and here there is water and soil of good quality. As a result, soil for agricultural cultivation was carried from Higashiyama to Nishiyama. The polished stone adzes were unearthed in the process of collecting this soil.

The Kuyobashi site was also the scene of a large earth-collection project, and in the course of this activity, four large, polished stone adzes were found by the people involved in the work. They were kept at the Tametomoren Souvenir Shop in Ogago, and were photographed by Masayoshi Kaneyama of the Cultural Affairs section. In 1972, I searched for some trace of these four adzes, but was unable to learn their whereabouts. I was told that they might have been sold, or thrown away together with their case when it had broken. This loss is most unfortunate. My sketches are based on Kaneyama's photographs and measurements, and I think that they give a fairly accurate reconstruction of the original artifacts.

All four adzes display ample pecking on their surfaces, and the polishing, especially around the edge, is exceptionally fine. Edge-polishing is evident only on the front surface, but there appear to be traces of polishing all the way back from the front edge. The adze in Figure 2, as far as it is possible to determine from the photograph, appears to have a convex curve, in the manner of hollow-edged gouges. Hollow-edged gouge type stone adzes have also been found at the Mitsune site (Fig. 6), and as I shall discuss later, the most representative examples of this type of adze come from Kita Iwojima. The adze cross-section is cylindrical at the center, giving the adze a very sturdy appearance. All four are made of basalt. I have seen few large polished stone adzes of this type from Stone Age sites in Japan. The so-called pointed-butt cylinder axes are present at Middle Jomon sites, but most of these are damaged and not as well preserved as those from Hachijo Island. They are, as their name suggests, cylindrical in shape. Most intriguing of all is the situation in which the Hachijo adzes were discovered. They appear either singly or severally together in perfect condition. Since the island is covered with thick, volcanic ash there is no way that the topography of the land at the time the adzes were deposited can be determined, but judging from the present topography of their discovery sites, in most cases the sites were the tops of hills where it is highly unlikely that settlements would have existed. In this, they thoroughly resemble the Yayoi bronze bells which surface in isolation in hilly areas. It is possible that unique remains might be there. In any event, it is unlikely that the mystery of these polished stone adzes will be unravelled without quickly coming to an understanding of the factors surrounding the excavation of the Kuyobashi artifacts.

STONE ADZES FROM MAGOBE SITE (Fig. 7)

The home of Saiji Komiyama is situated in the Mitsune low land between the Kamogawa and Okawa rivers. When digging under the storehouse in the garden in 1955, Komiyama found a layer of black earth under about one m of volcanic cinders, and one polished stone adze was reportedly discovered in this layer. When I visited the site, guided by the home's owner, it was evident that this site, which had lava expelled by Hachijo Fuji (Mt. Nishi) exposed on the surface, lay on a geological foundation considerably more recent than the Higashiyama area where the Yuhama site is situated. The adze is greenish in color, and has been pecked into a well-defined cylinder. Both sides of the edge have been polished, but one has been given a slight convex curve like a gouge. It is made of basalt. This adze differs in aspect from all of the other adzes found on Hachijo Island, and it appears to be a stone artifact from a different time period. The significance of this data must be considered in light of the recent geological age of the excavation site.

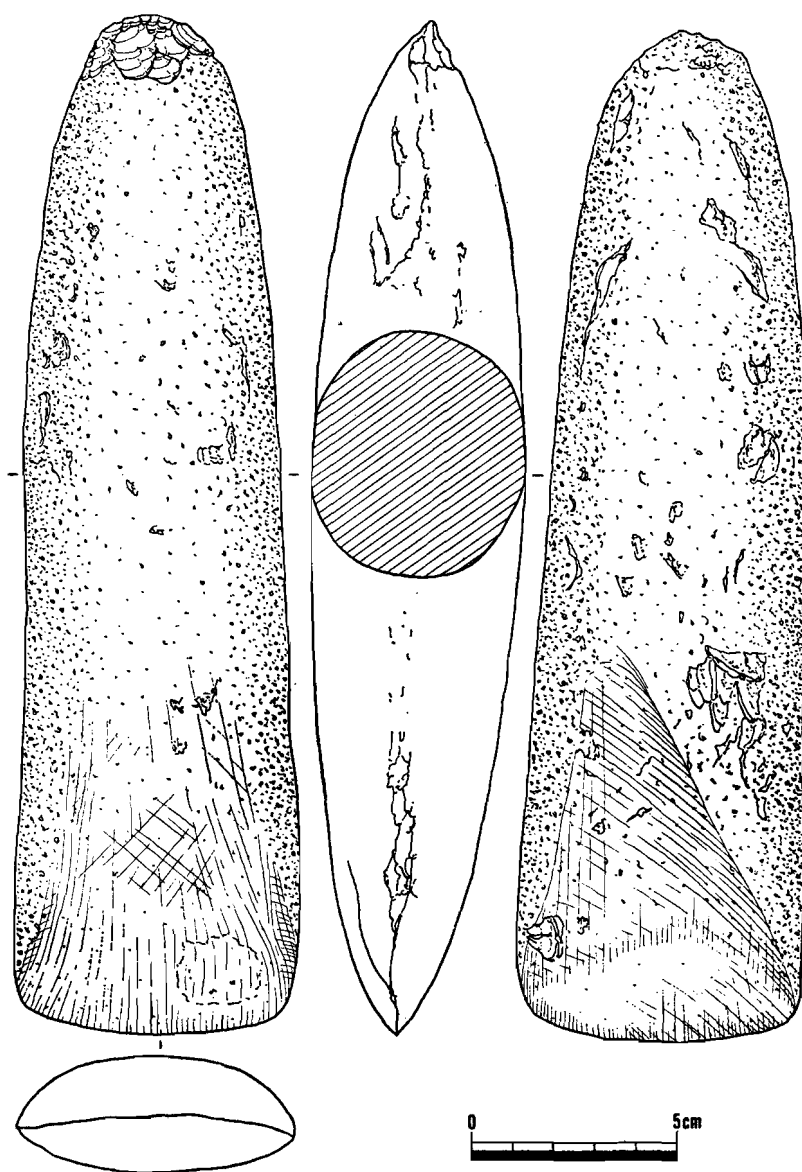


Fig. 6 Polished adze from the Mitsune site.

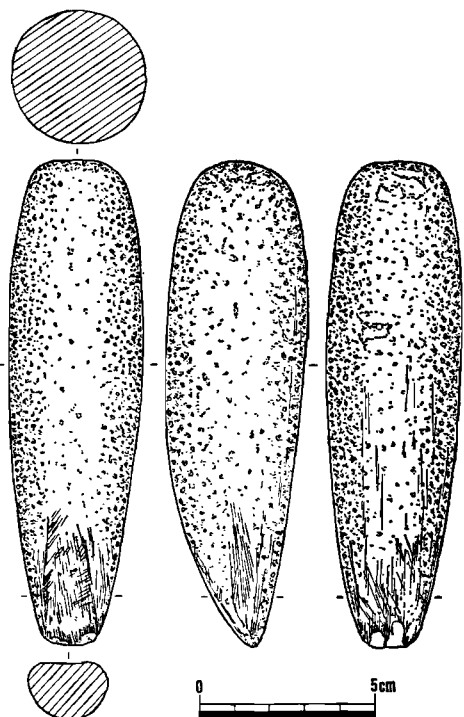


Fig. 7 Polished adze from the Magobe site.

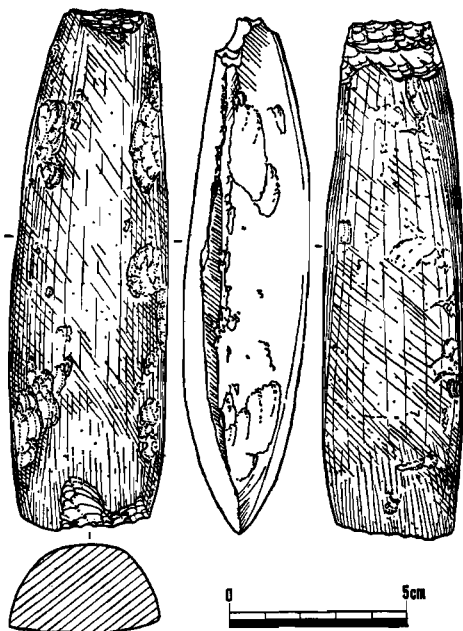


Fig. 8 Polished adze from the Yagisawa site.

A STONE ADZE FROM THE YAGISAWA SITE (FIG. 8)

One of the two stone adzes whose excavation site is unknown, discovered earlier during the general survey of the Izu Chain, is the adze pictured in Figure 8. It, together with the adze in Figure 6, is in the possession of the Hachijo High School. The adze was found in topsoil brought from a place called "Yagisawa" by the laborers involved in hauling in earth from Mitsune. It is made of basalt, somewhat speckled with white coloring. The cross-section shows a flattened cylinder shape, the back side has been smoothly polished, and the polishing of the front side shows fairly careful attention to the ridgeline. The edge appears to have been polished with exceptional care, and a convex curve has been carefully applied to the reverse side. This example likewise belongs to none of the adze types discovered at Kuyobashi, Mitsune, or Magobe, and is an important artifact in the comparative study of the Stone Age culture of Hachijo Island.

THE STONE ADZES OF THE KASHIDATE AREA (FIG. 9)

The Kashidate area, within which the Yuhama site lies, like the neighboring region of Nakanogo, faces the southern shore of the island. Here lies a gently-sloped, tongue-shaped expanse of land, while the coast itself changes over into steep cliffs. It is the sort of topography which would seem to be very amenable to prehistoric village life. The artifact shown at the top of Figure 9 was discovered at the Mukaizato site in Kashidate, and was found in topsoil transported to the Hachijo Botanical Park. It is a thick stone adze with a

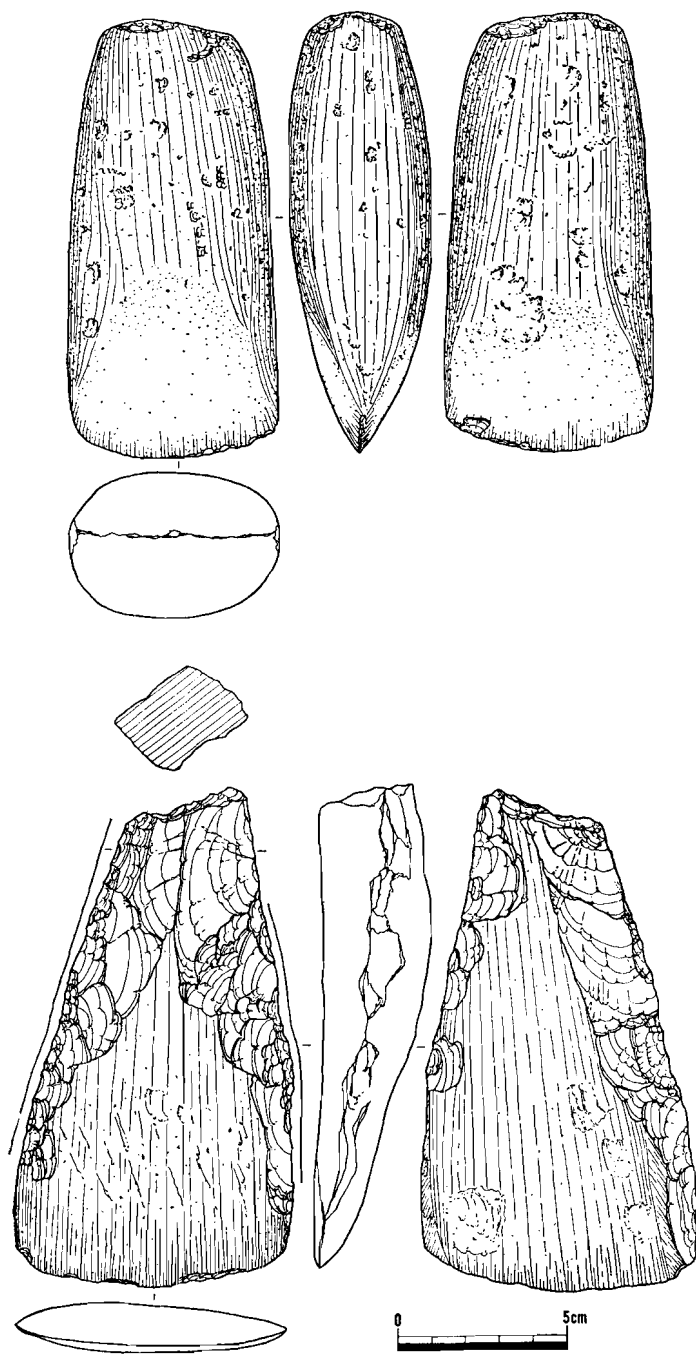


Fig. 9 *Top*, polished adze from the Kashidate Mukaizato site; *bottom*, polished adze from the Kashidate site.

clam-shaped edge, polished over its entire surface, and made of serpentine-type porphyry. Comparing it typologically to the artifacts first discovered at Yuhama, the Yuhama adze (Fig. 10) is somewhat larger although less thick; nonetheless, the two resemble one another. At the Yuhama site the polished beveled edge of a pecked stone adze was also excavated.

The Kashidate site, which is distinct from the Mukaizato site, lies 150–200 m above sea level on a southward-facing slope in the Kashidate area. Here as well, two stone adzes were found in the cut-away ledge formed in the course of an earth-hauling project. One of these is pecked, while the other is a beveled, polished stone adze (Fig. 9, bottom). It is shaped like a plectrum, and the edge has been well polished from both sides. The edge is not especially thick, and is distinctive rather for its diamond-shaped grip section. On the occasion of the second Yuhama excavation, as a result of stratigraphic investigations undertaken by Naoki Isshiki of the Ministry of International Trade and Industry, it was ascertained that all of the exposed land features in the Kashidate area are more recent than the Yuhama site. However, the pecked stone adzes from both sites resemble one another, and were probably produced around the same period of time.

Polished stone adzes have also been discovered at the Municipal Agricultural Testing Station and in the grounds of Ogago Elementary School on Hachijo Island, but the details of these finds are not known.

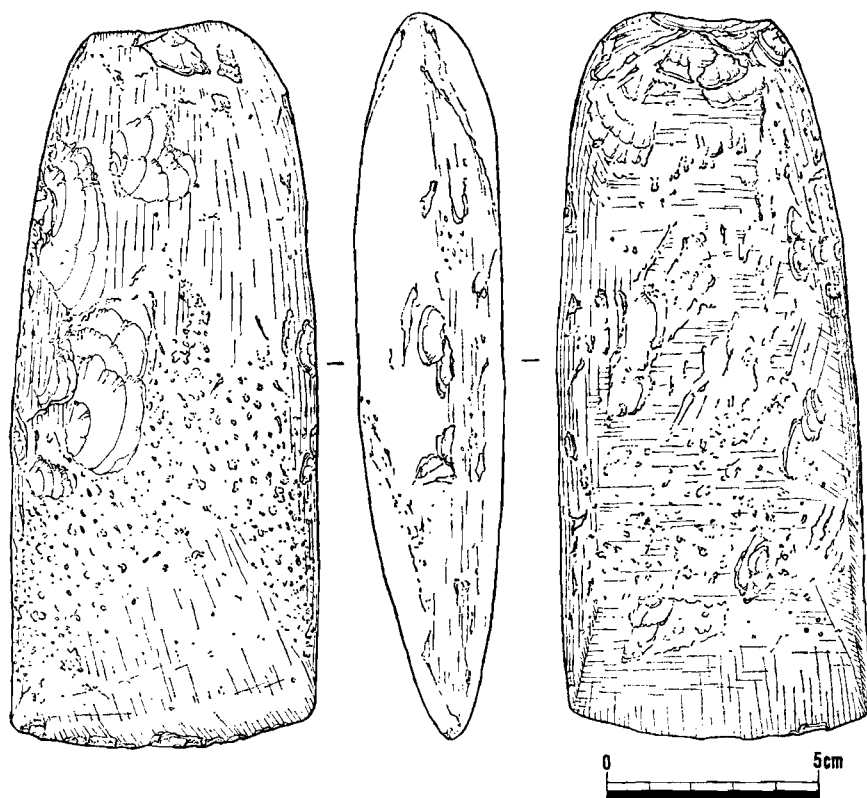


Fig. 10 Polished adze from the Yuhama site.

CHRONOLOGY OF THE ADZES

A total of 13 stone adzes has been found on Hachijo Island: four at Kuyobashi, one at Mitsune, one at Magobe, one at Yagisawa, one at Mukaizato in Kashidate, one at the Kashidate site, two at Yuhama, one at the agricultural testing station and one at Ogago Elementary School. Of these, the dating and stratigraphy are known only for the two adzes from Yuhama. In addition, we have a general idea of the level in which the Kashidate, Mukaizato, and Magobe adzes were found. For the others, we have no recourse but to draw conclusions strictly from the characteristics of the adze typologies themselves.

Taking into consideration the dates for the Yuhama site of 5300–5800 B.P., as arrived at by radiocarbon and fission-track based obsidian-hydration dating, there are no examples from the Japanese islands of large polished stone adzes like those discovered on Hachijo Island with an earlier date. Consequently we may conclude that the Yuhama artifacts are the oldest on Hachijo Island, with the rest having been laid down more recently. The Kashidate Mukaizato, and Kashidate adzes which resemble the Yuhama ones come from a slightly more recent layer, and it appears that the former adzes followed the latter almost immediately. It would appear acceptable to take all of these adzes as belonging to one type.

Turning next to the adze from Magobe—it was excavated directly under the Nishiyama volcanic lava flow and moreover was discovered in the geologically more recent low lands, while its distinctive shape also points to its being of more recent manufacture. It seems to me reasonable to consider this example as forming a distinct type.

Examining the examples for which the circumstances surrounding the finds are unknown, the adzes from Kuyobashi and Mitsune belong to the same type. The Yagisawa adze also constitutes one type. It is difficult on the basis of typology alone to determine which of these is the more recent, but to me the Yagisawa adze appears to be of more recent manufacture. I consider it almost certain that these two types are older than the Magobe adze.

Collating all of these observations, the oldest polished stone adzes of Hachijo Island are those of Yuhama, which date to the Early Jomon period, and the Kashidate Mukaizato, and Kashidate adzes. These are not rounded in form, and are fairly flat. The rock used is serpentine-type porphyry, and the adzes are not exceptionally large. The Yuhama site has also produced pottery. With the passage of time at the Yuhama site, the cross-section becomes cylindrical and the back side of the edge becomes convex like a rounded gouge, while large adzes polished straight across the edge also appear. The Kuyobashi adzes were found all four together in a group, and there may be in the uniqueness of this disposition some clue to the particular culture of the time. The adzes were made of basalt, which is present on the island. Hachijo is the only island in the Izu chain with rice paddies. Subterranean water flows out abundantly from the north slope of Higashiyama, and in former times there was a spot for drawing water here. Mitsune and Ogago villages use this water to irrigate their rice paddies, and even now this region is the most important part of the island. It takes no great stretch of the imagination to realize that Kuyobashi, Mitsune, and Yagisawa all lie on the north slope of Higashiyama. There is no evidence that paddies, which even in historical times have proven difficult to maintain, existed at the time the adzes were made, but it appears that for some reason the prehistoric people who settled in such low areas buried large, polished stone adzes on the small elevated knolls in the area. In this they resemble the Yayoi people who hid their bronze bells in such spots.

The duration of the period during which these stone adzes were utilized is unknown,

but the adze from the Magobe site testifies to the arrival of another technology at a different period. The rounded cylinder of the body has been pecked into the form of a chisel, while the edge has been polished to form a gouge, there remaining no trace of the earlier tradition of large stone adzes. The area in which the adze was excavated is low land, and given the fact that it was found in the uppermost layer of black soil, the adze may belong to a very recent period. In any event, the history of Hachijo Island, prior to its recording in Kamakura Bakufu shogunate documents as an area under government jurisdiction, remains no more than legend, and any further speculations should await the appearance of more archaeological data.

THE LINEAGE OF THE HACHIO ADZES (Fig. 11)

When investigating the culture of Hachijo, it must be remembered that the island lies within the Black Current region. The main flow of the Black Current begins in the waters east of central Luzon Island in the Philippines, moves north through the waters east of Taiwan, and, flowing between Amami Oshima and Yakushima, emerges from the East China Sea into the Pacific off the east coast of Kyushu. Thence it flows along the south coasts of Shikoku and Honshu and encounters the tip of the Oyashio Cur-

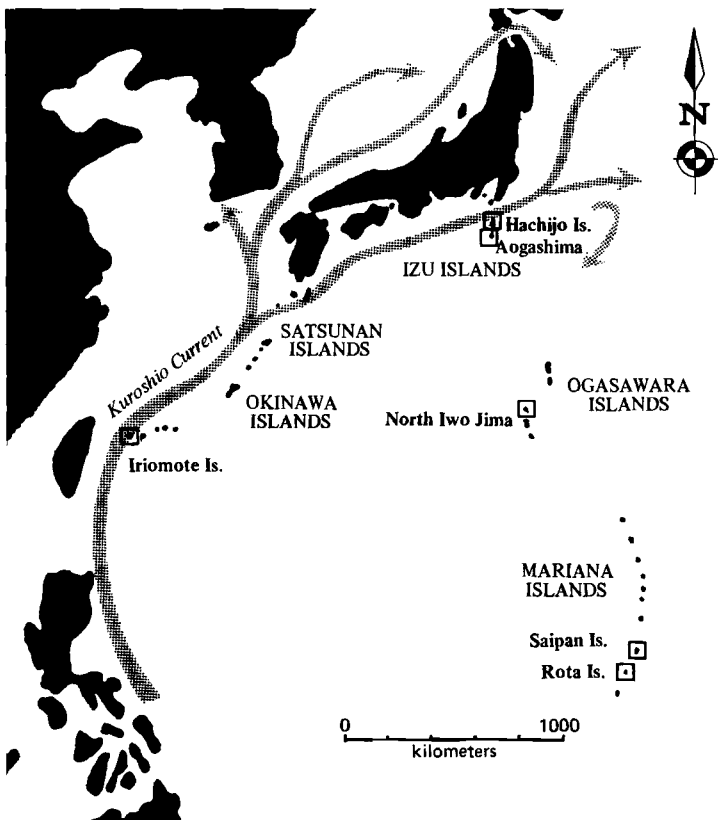


Fig. 11 The Kuroshio current and the distribution of excavated polished stone axes.

rent off Boso Peninsula. Both warm water and cold water currents meet in the area, within which lie a number of large and small islands. There is considerable variation in ocean depth and the weather changes quickly; very often there are localized short-term fluctuations in the current. From this we can derive some idea of the complexity of the factors affecting the Black Current in the ocean adjacent to the Izu Chain. The Black Current normally flows between Hachijo and Miyake, and the sea here is commonly referred to as the "Kurose River." The current reaches a speed of over seven knots here, and, unless the fishermen cruising the area today exercise considerable caution, they can run into difficulties when attempting to cut across the flow. The difficulties presented would have been even greater during the prehistoric period, when navigational techniques were still in their infancy.

On a clear day Miyake and Mikura can be seen from Hachijo. There would naturally be a desire to cross over to Hachijo; nonetheless, evidence of the continuous culture which developed in the northern part of the Izu Chain, which includes Miyake and Mikura, is altogether lacking on Hachijo. What developed was literally an indigenous, isolated island culture. The speed of the current prevented intentional or intermittent travel between Hachijo and the other islands.

In attempting an overall synthesis of the data obtained from the Yuhama site, taking into account the pottery, stone adzes,¹⁴C dating, the locale where the fission-track based, obsidian-hydration dating was obtained, and so forth, there are no observable elements which set Yuhama distinctly apart from the Jomon culture sites of the Japanese mainland. However, the marked differences separating the Yuhama site from sites on Mikura on the other side of the "Kurose River" are striking.

Adzes of the type found at Kuyobashi and Mitsune sites have been found on the nearby island of Aogashima. Slightly farther to the south three such adzes have been discovered on Kita Iwojima. One of these has been discussed previously by Isamu Kono. I learned recently that the other two are in the possession of the Archaeology Department of Tokyo University. Apparently a large number of these rounded, gouge-type stone adzes have been discovered in the Mariana Islands, but little in the way of hard archaeological data is available for these artifacts. Among the stone implements collected on Saipan are a number of round, gouge-shaped stone adzes, but, comparing these with the Hachijo adzes, they would appear to be too small for there to be a direct connection.

The Yagisawa site adzes exhibit a beaked cross-section, although not a well-defined one. As Namio Egami has pointed out, there appear to be some points in common with the polished stone adzes which occur on Iriomote Island in the southern Ryukyus. Egami also states that such beaked adzes are widely distributed in Southeast Asia and Oceania as well. In any event they do not appear to be Japanese stone adzes.

I have stated elsewhere that the chisel-type adze found at the Magobei site resembles an example excavated on Rota in the Marianas; however the Hachijo adze is larger and would appear to have been put to a different use. Reportedly, similar adzes occurred in the Philippines during the Late Neolithic period.

In the preceding, I have discussed the dating and lineage of the stone adzes found on Hachijo Island. Adzes from sites more recent than the Yuhama, Kashidate Mukaizato, and Kashidate sites, with their beaked or rounded cross-sections, do show a resemblance to those of the south. Research on the dialect, folklore, ethnography, and customs of present-day Hachijo Island inevitably indicates southwestern Japan deviation; we cannot ignore the influence of the Black Current. Probably during the course of the Japanese

Jomon people's penetration of the northern Izu Chain some sites were left on Hachijo Island. Later the Black Current strongly inhibited travel between the islands, and the culture which then existed in an altered form was the Yuhama Stone Age culture. After this I would surmise that a culture discontinuous with that of mainland Japan was transmitted to Hachijo Island.

ACKNOWLEDGMENTS

This paper is based primarily on the results of site investigations carried out in the course of the four surveys conducted by the Tokyo Metropolitan Board of Education. I am indebted to Koichi Nagamine, the leader of the surveys, and to Professor Hiroshi Miyazaki, a member of the team, and presently employed in the Municipal Department of Culture. I would also like to express my appreciation to Shigeo Kasai, who lives on Hachijo Island in the village of Ogago.

REFERENCES

- EGAMI, TOMOKO
1973 Stone tools of Saipan Island. *Busshitsu Bunka* 22.
- ESAKA, TERUYA
1971 *Rounded, Gouge-Shaped Stone Adzes of Kita-Iwo Island—An Interpretation of the Compiled Data.* Nihon Kokogaku Senshu, vol. 20. Tokyo: Tsukiji Shokan.
- GOTO, MORIKAZU, ET AL.
1958 Archaeological research on Miyake and Mikura islands. *Tokyo-to Bunkazai Sogo Chosa Hokokusho* 6.
1959 Archaeological investigations in the northern Izu Islands. *Tokyo-to Bunkazai Sogo Chosa Hokokusho* 7.
- KONO, ISAMU
1942 The rounded, gouge-shaped stone adzes discovered on Kita-Iwo Island. *Jinruigaku Zasshi* 57 (7).
- MIYAZAKI, HIROSHI, SHIZUO ODA, AND KOICHI NAGAMINE
1973 Site survey of the islands of the metropolitan Tokyo area. *Bunkazai no Hogo* 5.
1976 The Stone Age sites of Hachijo Island. *Tokyo-to Maizo Bunkazai Chosa Hokokoku* 4.
- SUGIHARA, SOSUKE, AND MITSUNORI TOZAWA
1967 The Stone Age site of Yuhama on Hachijo Island, *Tokyo-to Kokogaku Shukan* 3 (4).
- TSUBOI, SHOGORO
1901 Trade contacts of Stone Age peoples. *Toyo Gakugei Zasshi* 9.
1901 Stone Age sites lying beneath lava flows. *Jiji Shimpō*.
- TSURUMARU, TOSHIKI, SHIZUO ODA, NAOKI ISSHIKI, AND MASAO SUZUKI
1973 On determining the place of origin of the obsidian excavated in the Izu Islands, and the problems thereof. *Bunkazai no Hogo* 5.